

BioE 332A – Large-Scale Neural Modeling

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McCullough 122, Weds & Fri 12:50-2:05pm

Wk	Date	Topics	Reading & Assignments
1		Overview and Synapse	
	Wed 1/7	Course Overview	
	Fri 1/9	Synapse Models	Lab1: Synapse
2		Neuron Models	
	Wed 1/14	Integrate-and-Fire	
	Fri 1/16	Positive Feedback	Lab2: Neuron
3		Neuron Behaviors	
	Wed 1/21	Frequency Adaptation	
	Fri 1/23	Bursting	Lab3: Adaptation & Bursting
4		Neuron Interactions	
	Wed 1/28	Phase Response	
	Fri 1/30	Two-Neuron Example	Lab4: Phase Response
5		Synchrony	
	Wed 2/4	Inhibitory Networks	
	Fri 2/6	Role of Delay	Lab5: Synchrony
6		Attention	
	Wed 2/11	Excitatory–Inhibitory Networks	
	Fri 2/13	Neuromodulation	Lab6: Attention
7		Synaptic Plasticity	
	Wed 2/18	Spike-Timing Dependence	
	Fri 2/20	Feedforward Synapses	Lab7: Synaptic Plasticity
8		Plasticity and Synchrony	
	Wed 2/25	Recurrent Synapses	
	Fri 2/27	Combating Variability	Lab8: Plasticity & Synchrony
9		Associative Memory	
	Wed 3/4	Storing Patterns	
	Fri 3/6	Recalling Patterns	Lab9: Memory
10		To Be Determined	
	Wed 3/11		
	Fri 3/13		Lab10: TBD
